

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-48

Name: Smith Dam **County(ies):** Stanley
Legal Description: T109N-R79W-Sec. 11 **GPS:** 44°15'48.49"N 101°00'46.92"W
Location from nearest town: 8 miles S, 2.5 miles east of Ft. Pierre

Date of present survey: June 8-10, 2015 (netting)

Date of last survey: July 9-11, 2012 (netting)

Most recent lake management plan: None done

Management classification: Unknown

Primary Game Species	Secondary and Other Species
Bluegill	Golden Shiner
Black Crappie	Yellow Perch
Largemouth Bass	White Crappie

PHYSICAL DATA

Surface Area: 12 acres **Watershed:** Unknown
Maximum Depth: 20 feet **Mean Depth:** 4-8 feet
Lake elevation at time of survey (field observations): 1.5 feet low
Contour map: NA **Date:** NA

Smith Dam is located in Stanley County. The entire lake is located on property owned by the United States Department of Agriculture, Forest Service and is part of the Fort Pierre National Grasslands. The only structure is the dam grade and outlet structure, which were recently repaired.

Sherriff Dam is a 12 surface acre lake that is entirely surrounded by cattails along with many other emergent types of aquatic vegetation. Submergent vegetation also surrounds most of the shoreline to depths of around 4-5 feet and consists of many different species of pondweeds. The combination of submergent and emergent vegetation around the lake limits the amount of shore fishing opportunities. There is also limited boat access that is limited to a canoe or duck type boat that can be easily loaded and unloaded by hand. There is good ice fishing opportunities. No depth contour map has ever been done on Smith Dam.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident at the time of the survey. Water clarity is fair with a secchi disc reading of 1.5 feet. Other water quality characteristics were measured in the field on June 8, 2015, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Table 1. Water chemistry results from Smith Dam, Stanley County, June 8, 2015.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (μS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	77.2	4.46	38.6	98	113	7.92	209	104	0.10	-177.0	1.5
A	17	68.9	2.15	41.4	108	89	7.42	--	107	0.10	-184.5	

BIOLOGICAL DATA

Methods:

Smith Dam was sampled on June 8-10, 2015, with eight overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets were set or electrofishing was done during this survey. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of eight, overnight ¾-inch frame nets at Smith Dam, Stanley County, June 8-10, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	131	79.9	16.4	± 9.5	95.9	79	62	101
Black Crappie	30	18.3	3.8	± 1.7	17.1	71	12	104
White Crappie	1	0.6	0.1	± 0.2	0.8	--	--	--
Yellow Perch	1	0.6	0.1	± 0.2	0.8	--	--	--
Largemouth Bass	1	0.6	0.1	± 0.2	0.3	--	--	--

* Four year mean (1993, 2006, 2009, 2012)

Bluegill

Bluegills continue to be the dominant species sampled in Smith Dam. The CPUE of 16.4 is well below the 58.6 from the 2012 survey as well as the 95.9 four year mean (Table 2). Growth continues to be slow with means below statewide, regional and SLI means (Table 3). Condition is good with a mean Wr of 101. Figures 1 through 5 illustrate the length frequency histograms for the fish sampled over the last five surveys. Growth is slow and the numbers are down but the overall size structure is pretty decent with fish at the upper end of the preferred category. They would be desirable to anglers. Either removing some out of the population or increasing the largemouth bass population could really make this a quality bluegill fishery.

Table 3. Average back-calculated lengths (mm) for each age class of bluegill sampled from Smith Dam, Stanley County, 2015.

Year Class	Age	N	Back-calculated Age											
			1	2	3	4	5	6	7	8	9	10	11	12
2013	2	21	48	94										
2011	4	3	39	65	108	154								
2010	5	3	35	63	95	109	172							
2009	6	3	40	69	107	148	166	182						
2008	7	6	37	59	98	125	153	173	195					
2007	8	19	36	62	90	115	145	160	182	196				
2006	9	30	37	61	85	110	137	156	173	188	202			
2005	10	15	44	67	93	120	137	150	166	180	195	207		
2003	12	1	46	66	95	127	139	155	162	181	191	202	209	218
All Classes			40	67	96	126	150	163	176	187	196	205	209	218
Statewide Mean			55	103	141	166	180							
Region II Mean			52	97	134	164	180							
SLI* Mean			53	101	138	163	180							

* Small Lakes and Impoundments

Figure 1. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2015.

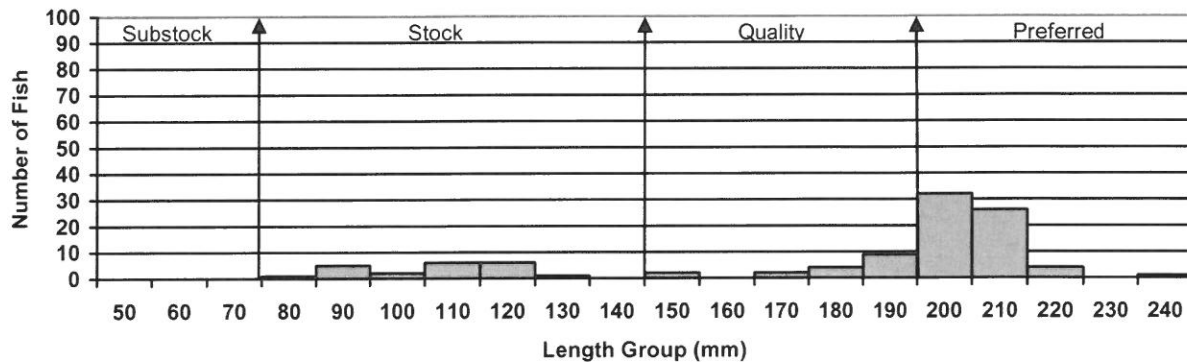


Figure 2. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2012.

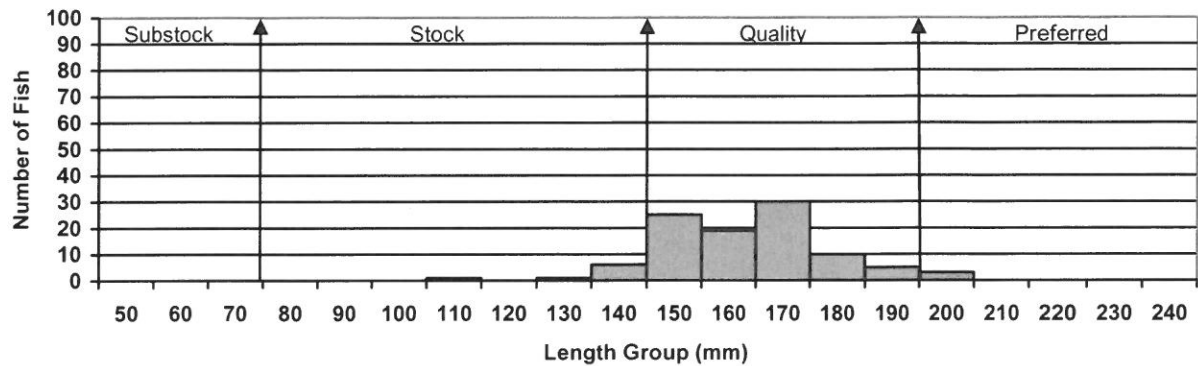


Figure 3. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2009.

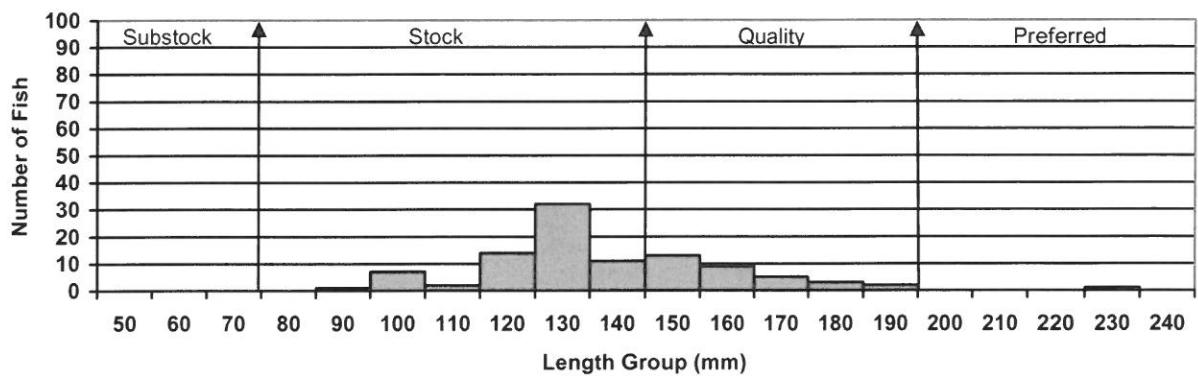


Figure 4. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2006.

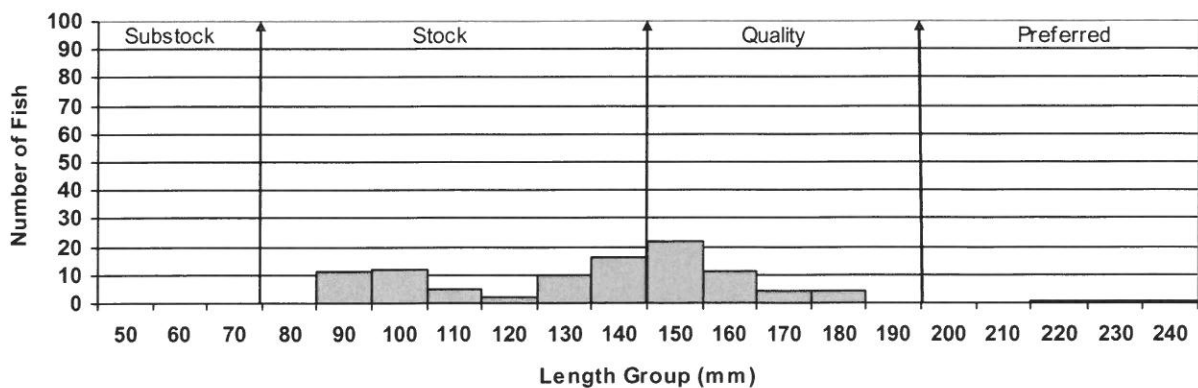
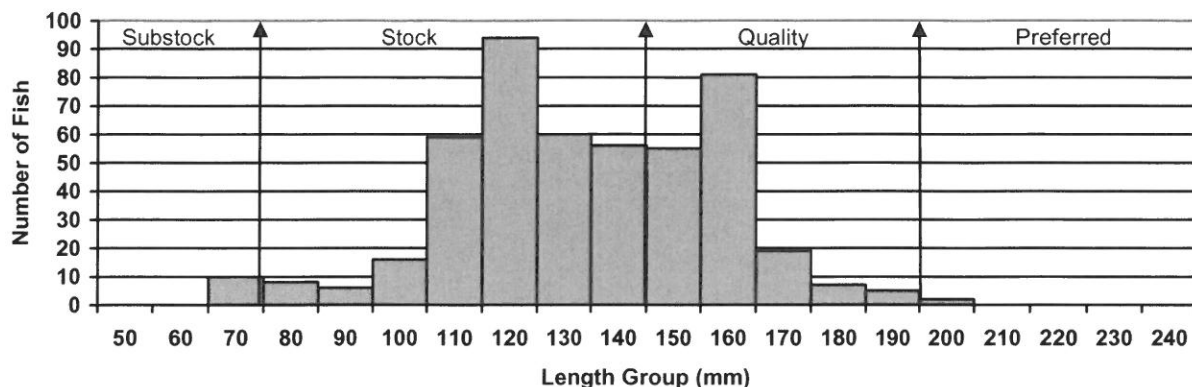


Figure 5. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 1993.



Black Crappie

Smith Dam continues to contain a black crappie population. The CPUE of 3.8 is down from the 16.5 from the 2012 survey as well as the 17.1 four year mean (Table 2). Growth again continues to be slow for the second survey in a row with means below statewide, regional and SLI means (Table 4). Condition is good with a mean Wr of 104. Figures 6 through 10 illustrate the length frequency histograms for the fish sampled over the past five surveys. Size structure is similar to the 2012 survey other than the density of the fish found in each grouping.

Table 4. Average back-calculated lengths (mm) for each age class for black crappie sampled from Smith Dam, Stanley County, 2015.

Year Class	Age	N	Back-calculated Age							
			1	2	3	4	5	6	7	8
2013	2	18	58	108						
2010	5	1	65	88	111	177	202			
2009	6	5	69	114	154	191	212	224		
2008	7	4	65	97	141	174	206	231	247	
2007	8	2	59	93	140	166	187	211	229	248
All Classes		30	63	100	137	177	202	222	238	248
Statewide Mean			83	147	195	229	249			
Region II Mean			75	132	177	209	235			
SLI* Mean			78	134	180	209	226			

* Small Lakes and Impoundments

Figure 6. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2015.

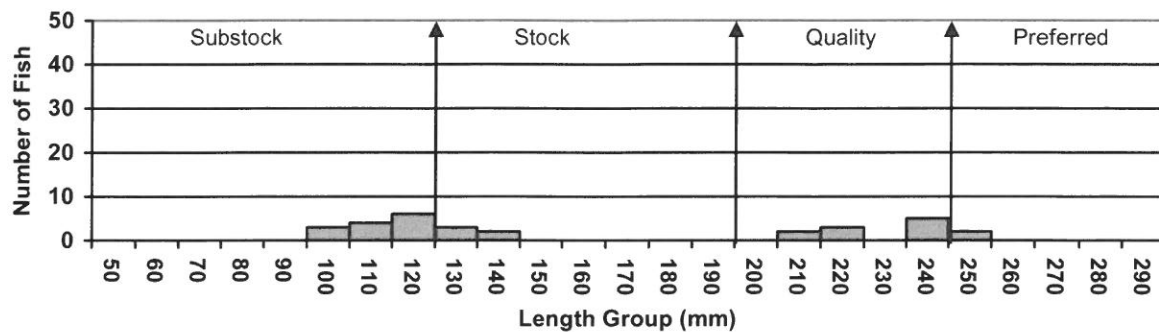


Figure 7. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2012.

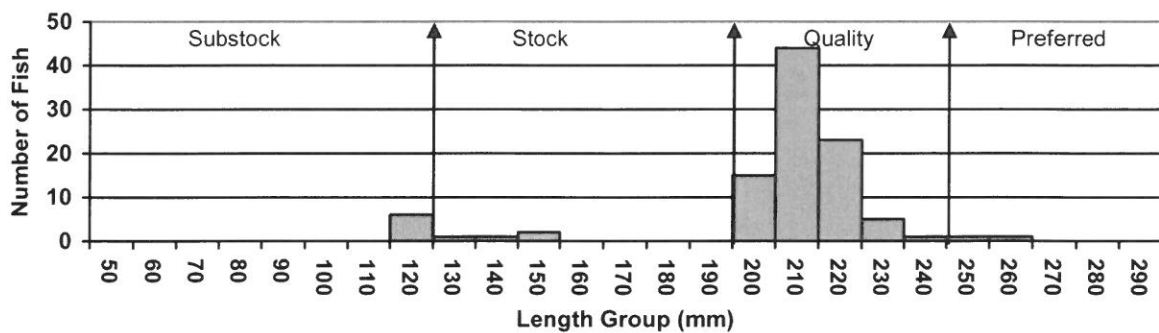


Figure 8. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2009.

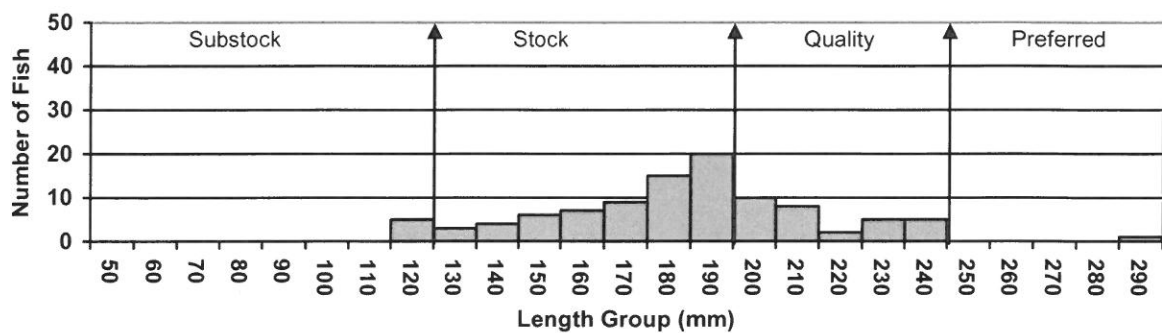


Figure 9. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2006.

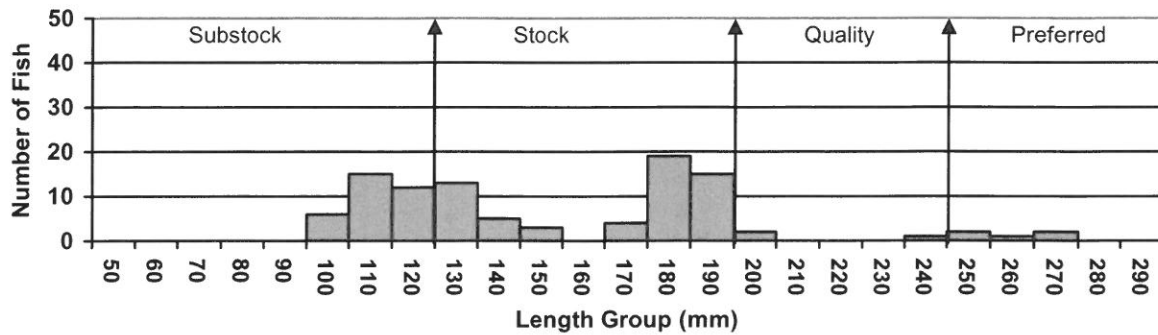
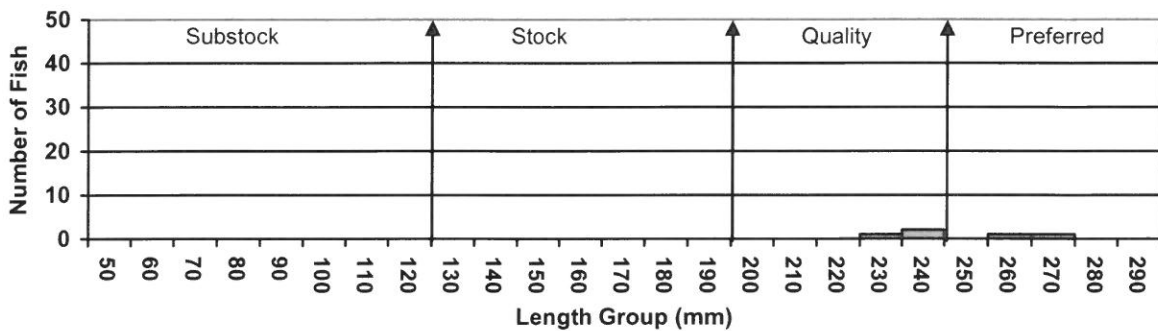


Figure 10. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 1993.



Other Species

White crappie, yellow perch and largemouth bass were the only other species sampled this survey. Each species only had 1 fish sampled, so not much can be said about their populations. Golden shiners were the only species not sampled this survey that had been in past surveys.

RECOMMENDATIONS

1. Resurvey in 2018 to further monitor the fish populations and to continually collect trend data on the lake.
2. Attempt to get an electrofishing sample of the largemouth bass population at the next survey date.
3. Manual removal of bluegills to help reduce the stunting/slow growth that is taking place.